

**REMARKS/ARGUMENTS**

Claims 1, 4, 7, 9-11, 13 and 16-21 are pending in the application of which claims 1, 11 and 17 are in independent format. Claims 2, 3, 5, 6, 8, 12, 14 and 15 have been cancelled. No new claims have been added.

**Rejection Under 35 U.S.C. 103**

Claims 1, 4, 7, 9-11, 13 and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sutton et al. (hereafter Sutton) (U.S. Pat. No. 4,718,827) in view of Park (U.S. Pat. No. 6,620,050), as evidenced by Raney et al. (hereafter Raney) (U.S. Pat. No. 6,769,889). This rejection is respectfully traversed.

I. Regarding Claims 1, 4, 7, 9 and 10, Claim 1 has been amended as set forth above. Applicants respectfully submit that neither Sutton nor Park describe, show or suggest, individually nor in combination, a multi-stage turbine fuel pump including the features recited in amended Claim 1.

For example, Applicants respectfully submit that neither Sutton nor Park describe, show or suggest, individually nor in combination, a multi-stage turbine fuel pump comprising an inlet section that includes an end cap having an open sided recess formed therein, a casing that includes an open sided recess formed therein, and a port plate that includes *an interiorly formed open sided cylindrical channel that encapsulates a spring pin* extending within the open sided recesses of the end cap and the casing and *extending through* the open sided cylindrical channel of the port plate wherein, *due to the respective open side of each of the end cap recess, the casing recess and the port plate cylindrical channel, forces exerted on and by the spring pin are distributed and dissipated through the end cap, the casing and the port plate such that the forces are not concentrated about the port plate cylindrical channel.*

Rather, Sutton describes a fuel pump assembly 10 that includes a first pump body 102 having a pair of axial grooves 146 *in an outer cylindrical surface* 106 thereof, a second pump body 104 having a corresponding pair of axial

grooves 148 *in the outer cylindrical surface* 128 thereof, and a pair of spring clip keying members 154 that are *placed across the outer surfaces 106 and 128 and into the grooves 146 and 148* of the first and second pump bodies. The spring clips include rolled-over ends that project beyond the ends and into keeper dimples 164 in end faces of the first and second pump bodies, thereby clamping the pump bodies together and preventing angular displacement between the pump bodies.

Additionally, Park describes a spring pin 150 installed *between a C-shaped* insulation groove 110 *formed in an inner surface* of a pipe 30 and a *C-shaped* insulation groove 120 *formed in an outer surface* of a shaft 40 disposed within the pipe 30, *thereby radially transferring a rotational force between the pipe 30 and the shaft 40*.

Thus, neither Sutton nor Park describe, show or suggest, individually or in combination, a multi-stage turbine fuel pump that includes open sided recesses formed in an end cap and a casing, and an *open sided cylindrical channel interiorly formed within* a port plate having a spring pin extending *through* the open sided cylindrical channel such that the spring pin is *encapsulated* within the port plate. Rather, Sutton describes grooves *in an outer surface* of first and second pump bodies and spring clips that are *placed across the outer surfaces* of the pump bodies *and into the grooves*. And, Park describes a spring pin *disposed between opposing C-shaped grooves formed at the surfaces* of a pipe and a shaft disposed within the pipe.

Additionally, at page 5 of the present Office Action, the Examiner states that, in Park, the combination of the shaft 40 disposed within the pipe 30 defines the casing recited in Claim 1. The Examiner continues by stating that the open sided recess, recited in Claim 1, is disclosed by the C-shaped groove 130 formed at the surface of pipe 30. Applicants respectfully submit that Park fails to disclose any of the recitations of amended Claim 1 other than a spring pin. However, in response to the Examiner's statements at page 5, Applicants respectfully submit that it is impermissible for the Examiner to combine elements of a reference to argue that the combination discloses a single claimed element

then separate the combined elements to argue that independently one of the elements discloses a claimed feature of the single claimed element. That is, it is impermissible for the Examiner to combine the pipe 30 and shaft 40 of Park to postulate that the combination discloses the casing recited in Claim 1 then argue that the C-shaped groove 130 of only the pipe discloses the open sided recess of the casing recited in Claim 1, without consideration of the structure of the C-shaped groove 130 within the combination of the pipe 30 and shaft 40. Applicants submit that if the shaft 40 and the pipe 30 are combined to comprise a single element, as the Examiner postulates, the C-shaped groove 130 becomes a *non-open side, i.e., closed, aperture within the combined single element*. Thus, the element in Park that the Examiner states discloses the casing recited in Claim 1, i.e., the combination of the pipe 30 and shaft 40, does not include an open sided recess, as recited in Claim 1, but rather the element in Park, i.e., the combination of the pipe 30 and shaft 40, includes a *non-open side, i.e., closed, aperture*.

Furthermore, Applicants respectfully submit that both Sutton and Park are silent with regard to disposition of a spring pin within open sided recesses formed in an end cap and a casing, and within an *open sided cylindrical channel interiorly formed within* a port plate, wherein, via the open sides, *the recesses and cylindrical channel are structured to distribute and dissipate forces exerted on and by the spring pin throughout the end cap, the casing and the port plate such that the forces are not concentrated about the port plate cylindrical channel*.

Still further, at page 6 of the present Office Action, the Examiner opines that it would be have been obvious to one of ordinary skill to modify the structure of Sutton to include circular channels capable of receiving the cylindrical pins of Park, to *increase the strength and aid in reducing vibration*. Applicants respectfully submit that this statement is conclusory and improper conjecture based on hindsight of the teachings of Applicants application and the recitations of Claim 1.

As set forth in MPEP 2142, "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the

prior art." Applicants respectfully submit that neither Sutton nor Park provides any teaching, suggestion or motivation to modify either of the respective inventions to reduce vibrations exerted on or by a spring pin. Moreover, as set forth above, Applicants respectfully submit that both Sutton and Park are silent with regard to disposition of a spring pin within open sided recesses formed in an end cap and a casing, and within an open sided cylindrical channel interiorly formed within a port plate, wherein, via the open sides, the recesses and cylindrical channel are structured to distribute and dissipate forces exerted on and by the spring pin throughout the end cap, the casing and the port plate such that the forces are not concentrated about the port plate cylindrical channel, as recited in amended Claim 1.

The Examiner goes on, at page 6, to note that in order for the grooves and notches 146, 148 and 150 of Sutton to receive a cylindrical spring pin the teachings of Sutton would have to be modified by boring out the grooves and notches 146, 148 and 150 into smooth round surfaces that could receive the spring pin taught in Park. Applicants respectfully submit that it is improper for the Examiner to modify a reference beyond what is taught or suggested by the cited reference(s). Neither Sutton nor Park provide any teaching, suggestion or motivation for boring out the grooves and notches 146, 148 and 150. Moreover, the teachings of Sutton would become structurally unworkable if the grooves and notches 146, 148 and 150 were bored out. That is, the teachings of Sutton provide spring clips that include *rolled-over ends* that project beyond the ends and into keeper dimples 164 in end faces of the first and second pump bodies *to thereby clamp the pump bodies together* and prevent angular displacement between the pump bodies. Applicants submit that boring out the grooves and notches 146, 148 and 150 would render the spring clips inoperable and make the intent of clamping pump bodies together impossible to achieve.

Thus, the Examiner is using hindsight based on Applicants' disclosure to make conclusory statements to support improper modifications to what is taught in the cited reference, i.e., boring out the grooves and notches of Sutton, in order to surmise that such improper modifications would be obvious to one skilled in

the art to achieve the result of the claimed invention. However, the cited references do not teach, suggest or provide motivation to make such modifications, and, in fact, such modifications would render the teachings of the cited reference inoperable.

With regard to Raney, the Examiner merely states that Raney is cited to provide evidence that cylindrical pins for aligning components of a fuel pump, e.g., cylindrical pins 58 in Raney, are known. Applicants respectfully submit that the pins 58 of Raney are not spring pins and that Raney does not describe, show or suggest, independently or in combination with Sutton and/or Park, a multi-stage turbine fuel pump as recited in amended Claim 1.

Still further, at page 6, the Examiner states that the spring pin of Park is an 'equivalent' structure to the spring clips of Sutton. Applicants respectfully submit that spring pins of Park could not be substituted for the spring clips of Sutton and achieve the same functional result, and therefore are not 'equivalent'. For example, if the spring pins of Park were substituted for the spring clips of Sutton, the spring pins would merely fall out of the grooves 146 and 148 of Sutton and would not achieve the intended function of clamping the pump bodies 102 and 104 together. Thus, the spring pin of Park cannot be considered an 'equivalent' structure to the spring clips of Sutton because the spring pin of Park does not provide the same functionality as the spring clip of Sutton.

The Examiner goes on to state that Raney provides evidence that cylindrical pins are art-recognized equivalent structures. Applicants respectfully submit that this is again an unsubstantiated conclusory statement not supported by what is taught or rendered obvious by the cited references. Although the spring clips of Sutton function to align the pump bodies, the spring clips also function to clamp pump bodies together. Thus, any equivalent necessarily needs to provide the same functionality of aligning and clamping. Applicants respectfully submit that Raney merely describes retainer pins 58 that extend through an outlet side plate 14 and a center plate 18 into an inlet side plate 14 to maintain alignment of the components. Raney does not describe, show or suggest that the retainer pins clamp the components together. Thus, the retainer

pins of Raney do not provide evidence that the spring pins of Park and the spring clips of Sutton are art-recognized equivalents.

Still further the Examiner suggests that it would have been obvious to one of ordinary skill in the art to substitute a spring clip with clasps at both ends, as taught by Sutton, for the hollow cylindrical spring pins, as taught by Park. As set forth above, Applicants respectfully submit that the spring clip of Sutton provides functionality not provided by the spring pin of Park. Similarly, the spring pin of Park provides functionality not provided by the spring pin of Park, namely the spring pin of Park exerts radial forces on the aperture formed by installation groove 110 in combination with installation grove 120. The spring clip of Sutton does not provide such radial force. Thus, the spring clip of Sutton could not be substituted for the spring pin of Park and provide the same functional result of the teaching of Park. Nor, could the spring pin of Park be substituted for the spring clip of Sutton and provide the same functional result of the teachings of Sutton. Furthermore, the solid retainer pins of Raney provide no teaching or suggestion that the spring clips of Sutton and the spring pins of Park are functional equivalents.

Therefore, for at least the reasons set forth above, Applicants respectfully submit that amended Claim 1 is patentable over Sutton in view of Park, as evidenced by Raney.

Claims 4, 7, 9 and 10 depend from amended Claim 1. Accordingly, when the recitations of Claims 4, 7, 9 and 10 are considered in combination with the recitations of amended Claim 1, Applicants submit that Claims 4, 7, 9 and 10 are likewise patentable over Sutton in view of Park, as evidenced by Raney.

II. Regarding Claims 11, 13 and 16, Claim 11 has been amended, as set forth above, to recite features similar to those recited in amended Claim 1. Therefore, in accordance with the remarks set forth above with regard to amended Claim 1, Applicants respectfully submit that amended Claim 11 is also patentable over Sutton in view of Park, as evidenced by Raney.

Claims 13 and 16 depend from amended Claim 11. Accordingly, when the recitations of Claims 13 and 16 are considered in combination with the recitations

of amended Claim 11, Applicants submit that Claims 13 and 16 are likewise patentable over Sutton in view of Park, as evidenced by Raney.

III. Regarding Claims 17-21, Claim 17 has been amended, as set forth above, to recite features similar to those recited in amended Claim 1. Therefore, in accordance with the remarks set forth above with regard to amended Claim 1, Applicants respectfully submit that amended Claim 17 is also patentable over Sutton in view of Park, as evidenced by Raney.

Claims 18-21 depend from amended Claim 17. Accordingly, when the recitations of Claims 18-21 are considered in combination with the recitations of amended Claim 17, Applicants submit that Claims 18-21 are likewise patentable over Sutton in view of Park, as evidenced by Raney.

For at least the reasons set forth above, Applicants respectfully request that the §103 rejections of Claims 1, 4, 7, 9-11, 13 and 16-21 be withdrawn.

**Conclusion**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 238-2400.

Respectfully Submitted:

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